Fourth National Green Power Marketing Conference

Key Ingredients for Successful Markets, May 10-11, 1999, Philadelphia, Pennsylvania

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REPORT SUMMARY

Today, in regulated monopoly markets, more than 50 utilities offer "green pricing" to their customers, but competitive green power marketing is still in early evolution. After a year of competitive market activity, it has become clear that the rules and mechanisms established for electric industry restructuring are critical to the success of green power marketing. The Fourth National Green Power Conference examined the current state of green power marketing, identified key market and policy needs under electric industry restructuring, and explored opportunities to improve on the success of green power sales in both regulated and deregulated markets.

Background

Green power is a market-driven product developed to meet expressed customer preference for electricity derived from renewable sources such as solar, wind, biomass, and geothermal power. Studies consistently show that energy consumers, when informed, will consider more than price in making purchasing decisions. This conference, as the previous three (documented in EPRI reports TR-106986, TR-109179, and TR-112315), explored what needs to be done to reach these consumers.

Objective

To provide insights on marketing green power resources in a competitive arena.

Approach

The U.S. Department of Energy, EPRI, the Edison Electric Institute, and the Renewable Energy Alliance, with additional support from Green Mountain Energy and PG&E Corporation, organized the Fourth National Green Power Conference, held May 10-11, 1999, in Philadelphia, Pennsylvania.

Key Points

Some key messages that emerged from the conference are the following:

- Green power markets will be most successful where concerted efforts are made by industry stakeholders to address market issues. Among the issues most often mentioned were competitive market rules, consumer education, information disclosure, environmental regulations, and public policy support.
- Market rules are critical to the success of green power in competitive markets and the threshold market requirement is price competition. As of May 1999, nearly 400,000 customers had switched suppliers in Pennsylvania and it is estimated that as many as one-third of switching customers had chosen green power since it became available in the market.

In contrast, much less switching activity had occurred in California, Massachusetts, and Rhode Island. Several speakers indicated that the difference can be attributed to the lack of price competition in the latter states.

- Consumer education is a key driver of green power sales in both competitive and regulated markets. Education is also necessary for consumers to become aware of the environmental attributes of competing power products.
- Successful green power markets can breed support for public policies by demonstrating that consumers do care about environmental issues.
- Aggregation of customer loads including established energy cooperatives, municipalities, communities of faith, and businesses with preexisting environmental or social interests can build markets for green power.

EPRI Perspective

As the number of regulated utility green-pricing programs continues to grow and competitive marketing strategies mature, it is increasingly clear that customer preference for renewable sources of electricity will indeed be a major factor in the new energy marketplace—"green power" is here to stay. The overall tenor of the conference participants was one of optimism toward the longer-term potential of green power markets. The positive experience with Pennsylvania's restructured market, as compared to that of other states where retail competition has started more slowly, was generally perceived to be indicative of what competitive forces, combined with appropriate policies, could achieve in other states as additional electricity markets are opened.

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Keywords

Renewable resources Marketing Hydroelectric power Wind power Biomass fuels Solar power plants

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1 OVERVIEW

It has been five years since the first electric utility company offered its customers the option of contributing separately to a fund for renewable energy development. Today, more than 50 utilities offer "green pricing" to their customers. Many states are opening their electric markets to competition and more than a dozen companies are competing to sell "green power" to consumers. As a result of these activities, nearly one-quarter of all U.S. electricity customers now have an option to purchase green power. As competition spreads in the electric power industry, more consumers will be given this choice and the market for green power services will expand.

The term "green power" is generally used to describe power generated from renewable energy sources, such as wind, solar, and geothermal power, as well as hydropower and various forms of biomass. Although utility green-pricing programs are becoming more established, competitive green power marketing is still evolving. After more than one year of competitive market activity, it has become clear that the rules and mechanisms established for electric industry restructuring are critical to the success of green power marketing.

In May 1999, the U.S. Department of Energy (DOE), Electric Power Research Institute (EPRI), Renewable Energy Alliance (REA), and Edison Electric Institute, with additional support from Green Mountain Energy and PG&E Corporation, sponsored the Fourth National Conference on Green Power Marketing in Philadelphia, Pennsylvania. The conference was designed to examine the current state of green power marketing, identify key market and policy needs under electric industry restructuring, and explore opportunities to improve on the success of green power sales in both regulated and deregulated markets.

Some key messages that emerged from the conference are the following.

• The success of green power markets will require action on many fronts.

Green power markets will be most successful where concerted efforts are made by industry stakeholders to address market issues. Among the issues most often mentioned were competitive market rules, consumer education, information disclosure, environmental regulations, and public policy support.

Market rules are critical to the success of green power in competitive markets.

The threshold market requirement is price competition. As of May 1999, nearly 400,000 customers had switched suppliers in Pennsylvania and it is estimated that as many as one-third of switching customers had chosen green power since it became available in the market. In contrast, much less switching activity had occurred in California, Massachusetts,

Overview

and Rhode Island. Several speakers indicated that the difference can be attributed to the lack of price competition in the latter states.

 Consumer education is a key driver of green power sales in both competitive and regulated markets.

Nearly all speakers mentioned the importance of consumer education in building public awareness of market choices—it is no accident that customer switching activity has been most robust in Pennsylvania, where there is a 90% awareness level of customer choice. Education is also necessary for consumers to become aware of the environmental attributes of competing power products.

• Successful green power markets can breed support for public policies.

Although some advocates are concerned that policy makers view competitive market forces as a substitute for renewables policy initiatives, many speakers opined that the success of green power markets will lead to greater political support for public policies because it will demonstrate that consumers do care about environmental issues. Several types of policies that can be adopted to support the development of green power markets were discussed.

• Aggregation of customer loads can build markets for green power.

Although customer aggregation programs for green power are still in their infancy, a number of programs are already under way that are validating the concept. These aggregation methods include established energy cooperatives, municipalities, communities of faith, and businesses with preexisting environmental or social interests.

• The number of utility green-pricing programs continues to expand.

Three new green-pricing programs were described. Common program challenges identified by the speakers included customer education, the need to collaborate with external stakeholders in program development, and the importance of internal management support and a well-trained utility sales force.

The overall tenor of the conference participants was one of optimism toward the longer-term potential of green power markets. The positive experience with Pennsylvania's restructured market, as compared to that of other states where retail competition has started more slowly, was generally perceived to be indicative of what competitive forces, combined with appropriate policies, could achieve in other states as additional electricity markets are opened.

2 OPENING SESSION

Nora Mead Brownell, commissioner with the **Pennsylvania Public Utility Commission** (PUC), provided the welcoming address and presented an overview of her state's transition to a competitive electricity market.

Commissioner Brownell noted that the impetus behind Pennsylvania's restructuring law was high electricity costs, which were 15% above the national average, and large discrepancies between the rates charged in different utility service territories across the state. For these reasons, restructuring legislation was quickly adopted. The law established a short timetable to resolve issues, which provided some certainty to the market and pushed all of the parties to act. The restructuring law became effective on January 1, 1997, and all utility-specific cases were settled by October 1998.

One of the more important features of the Pennsylvania restructuring process was the creation of a "shopping credit," which provides customers with a "price to compare" when shopping for power. Rather than providing steep rate cuts, which can discourage customers from shopping, the commission approved a modest rate cut to go along with the shopping credit, which satisfied a number of different stakeholder constituencies. The utility settlement agreements also established renewable energy pilot programs for low-income customers and sustainable energy funds. Finally, the state established a "massive," \$100 million education program to inform customers about electric competition. As a result, there is a 90% awareness level of customer choice among Pennsylvania residents.

Commissioner Brownell deems competition a success to date—nearly 400,000 customers have switched to alternative suppliers, representing more than 7,000 megawatts (MW) of load. About 80% of the switches are residential customers. Price is not the only factor driving consumers to switch providers; since the beginning 1999, an estimated one-fourth of residential customers had switched to a green power provider at a price premium. Finally, despite active customer switching, the stock prices of the incumbent utilities did not suffer; one company's stock actually rose by about 40%.

According to Commissioner Brownell, some early lessons learned in Pennsylvania's competitive market are that:

- Modest rate reductions in the first two years of competition, coupled with shopping credits, have encouraged customers to switch suppliers.
- The state benefited from a pre-competition pilot program that allowed some time to work out the kinks in the competitive market transition (a 10% rate cut to encourage customers to participate in the pilot).

Opening Session

• An extensive customer education campaign is necessary to inform customers of their choices.

Several months into competition, many short-term issues have been addressed. However, a number of longer-term needs remain, such as continuing to educate customers and otherwise nurturing the market to encourage new entrants, developing a truly independent system operator with a strong enforceable code of conduct, and restructuring regulators to become communication experts.

Julie Blunden, vice president of strategic planning for **Green Mountain Energy**, began her talk by anointing Philadelphia the "Green Power Capital of the World," noting that more customers in Philadelphia have switched to green power than in any other city. Ms. Blunden reported that Green Mountain had signed up about 100,000 customers in Pennsylvania, several times the number of customers they are serving in California. She also announced that the company had just completed construction of the largest solar power plant in the state and that the company plans to begin offering rooftop solar systems around the state.

Ms. Blunden said that even the limited experience of today's competitive markets shows that consumers will choose green power if they are educated about their market choices and if the market conditions are right. The threshold market requirement is price competition. In Pennsylvania, more customers are switching because of the shopping credits. In California, where the restructuring law provided for a rate cut and no shopping credit, there is no incentive for customers to be active in the market.

Ms. Blunden described the competitive disadvantage that green power marketers face with incumbent providers. She explained that there are many "hidden costs" of doing business that must be recovered but that are not being unbundled in the utility cost structure. Marketers must be able to beat the default electricity prices by a margin great enough to cover these additional costs. Default providers also "inherit" customers without incurring any marketing or switching costs. She noted that the market power of incumbent providers can be mitigated through appropriate policy design and that it is important for states to consider the impacts of stranded cost recovery, rate cuts, and shopping credits when designing their restructuring policies.

Steve Huntoon of **Conectiv Energy** addressed the evolving markets for green power on the East Coast, noting that because of recently passed restructuring legislation, 10 million customers in Delaware, Maryland, New Jersey, and Pennsylvania will soon be able to choose their electricity supplier.

Mr. Huntoon noted that Pennsylvania has set an example for surrounding states to follow. The state's electricity pilot program was important in gaining early experience with the market. Although green power was not offered in the pilot program, about one-third of customers who have switched since the competitive market opened on January 1, 1999 have chosen a green power supplier.

Mr. Huntoon described a number of hurdles facing green power marketing in the region. First, residential customers, the segment most interested in green power, represent only a small fraction of the total load. Second, both electric energy and capacity prices have been rising in the region, which compresses the shopping credit, making it more difficult for green power

providers to offer competitively priced products. Third, stranded cost recovery makes all product offerings look less attractive to customers. However, he noted that the Pennsylvania experience has shown that green power marketing is viable and that, through marketing initiatives and consumer education programs, public awareness of green power has risen dramatically.

Other institutional issues affecting the green power market include net-metering policies, renewable energy funds interconnection requirements, renewable portfolio standards for conventional suppliers, and advanced metering and information systems.

Steve Kline, vice president of federal governmental and regulatory relations for **PG&E Corporation**, provided a broader perspective on "clean energy." Mr. Kline believes that environmental issues are going to shape future energy debates and that the secret to getting cleaner energy is providing for competitive services in the retail market. But getting to competition involves a number of factors, including dismantling barriers to market entry and creating a level playing field for all market participants.

Mr. Kline described a "push-pull" relationship between state and federal activities, wherein momentum in one arena creates momentum in the other. Thus, the threat of federal restructuring legislation is driving states to move. And although there is much diversity in the state approaches—"50 little laboratory experiments"—virtually all states are incorporating environmental considerations into their restructuring laws and regulations.

At the federal level, a number of policies and initiatives are being considered that could help expand the green power market. These include extension of the wind energy production tax credit, establishment of generation performance standards, and climate change mitigation measures. And the Clinton Administration's electricity restructuring proposal assures that environmental considerations will be part of the national legislative debate. Other federal activities that could impact clean energy are the "call-in" of state implementation plans by the U.S. Environmental Protection Agency (EPA), more stringent regulation of pollutants that cause acid rain, and establishment of an insurance program for renewable energy marketers. The activities of nongovernmental organizations will also be important for green power, including the National Association of Attorney Generals' (NAAG) green power marketing guidelines, the Natural Resources Defense Council's (NRDC) legislative consensus group, and the Green-e renewable energy certification program.

3

PANEL DISCUSSION—GREEN POWER: WHAT ARE CONSUMERS GETTING?

This panel discussed the types of green power products being offered to customers, as well as concerns that reliance on market forces will hurt the prospects for new renewables deployment. In the end, the panelists tended to agree that both markets and policies are needed to increase renewables deployment and that robust markets for renewables will build public support for policy efforts at both the state and federal levels.

Charlie Higley of Public Citizen described a Public Citizen report that criticized the early experience with the California green power market. Public Citizen's main concerns about the market are that (1) consumers be made aware of the content of green power products and (2) that green power sales lead to tangible environmental improvement. In assessing the California product offerings, they found that, in some cases, marketers are selling renewable power obtained from out-of-state resources or from existing resources owned by municipal utilities. Public Citizen also opposes green power sales based on promises to build new renewables capacity in the future because there is no guarantee that the capacity will actually be built. They would also like to see municipalities and cooperatives play a more active role in aggregating customers for green power.

More generally, Public Citizen takes the position that green power marketing may be insufficient by itself to spur greater renewables use and that formal state and federal policy support is required.

Sheryl Carter of the Natural Resources Defense Council (NRDC) noted that environmental groups generally support customer markets for green power but that competitive markets are not a substitute for renewables policies—public policies are necessary to establish a minimum public commitment to renewable energy. With a minimum public obligation, the availability of electricity choice allows customers to direct their dollars to support an even greater amount of renewables generation. She noted that markets can help address gaps in customer knowledge by creating awareness of the environmental impacts of electricity generation. Electricity choice gives consumers a mechanism to affect these impacts. Information disclosure is also important but will be most effective if it contains simple environmental comparisons.

Ms. Carter said that advocates should not expect the market to determine what types of green products are acceptable and then be critical of the results. Advocates need to be involved ahead of time in developing appropriate product and market standards. NRDC has been involved in several such efforts, including the Green-e program. The group has also developed a list of "preferred" green power products for its membership. Finally, NRDC is helping to develop a "Power Scorecard" that will rate green power products based on their overall environmental

footprint, including air, land, and water impacts. The goal of the program is to help consumers select the most environmentally beneficial products while sending a clear message to power marketers about the types of resources that are most acceptable to the environmental community.

Liz Robinson of the **Energy Coordinating Agency** (ECA) reported on the Green-e certification program in Pennsylvania—ECA serves as the host agency for the Green-e program in both Pennsylvania and New Jersey. Green-e provides a "stamp of approval" on green power products and is the nation's only green power certification criteria. The Green-e logo was created to increase consumer confidence in green power products and help build the market for green power and renewables development.

In Pennsylvania, the market is an important mechanism for renewables deployment because there has been very little explicit policy support. And because there is no information disclosure requirement, Green-e is an important communication vehicle for customers. The ethical guidelines contained in the Green-e program assure product quality—green power marketers are actually held to a higher public standard than other marketers. As an example, only Green-e customers receive product fuel mix disclosures. There is also a critical need for public education about renewables.

The Green-e definition in Pennsylvania is similar to that adopted in California, except that municipal solid waste has been excluded. There is also a minimum new renewables content requirement of 5% in the second year, rising to 10% in the third year. As of May 1999, three suppliers were offering 50% and 100% renewable, Green-e certified power products, and a fourth company had applied for Green-e certification. The Pennsylvania Green-e program is also exploring how to incorporate energy efficiency products in the certification process. Energy efficiency can be an important green power component in Pennsylvania because of the scarcity of available green power resources and the ability of energy efficiency savings to offset the higher cost of renewables.

Michael Tennis, the ReGen product manager for AllEnergy Marketing Company, argued that the availability of green power and customer choice in the market gives consumers the ability to take personal responsibility and action to reduce pollution. Green power marketing also educates consumers and builds greater public awareness of environmental issues, which ultimately results in greater public support for renewables policy initiatives. In fact, Mr. Tennis noted that green power marketing may be one of the most effective environmental education programs available. He suggested that the Public Citizen report has actually had a positive impact on the types of green power products that have been developed outside of California, with a focus on local development or projects that "you can live with."

Chris Schoenherr of Wisconsin Electric recounted his company's experience with developing a green-pricing program that encountered early criticism from local environmental groups. Because the company was eager to roll out a program and was concerned with the market risks of obtaining new supplies, they decided to purchase power from existing but underutilized renewable energy power plants. However, the environmental groups wanted the power to come from new generating facilities. The resulting criticism from the environmental community led to negative publicity for the utility. Given this experience, the company sought to work more closely with these groups, and developed a memorandum of understanding to develop new

renewable energy sources in the future. Afterwards, the dramatically improved relationship between the utility and the environmental groups, and the vigorous support from the latter, helped position the company's green-pricing program to became a national leader.

Mr. Schoenherr feels that it is paramount to address the customer's needs while working with outside groups to craft acceptable products. He also believes that green power market success will drive future renewables policy efforts because public support in the marketplace makes it easier for legislators to consider broader policy measures.

4

LUNCHEON SPEAKER—A FEDERAL PERSPECTIVE ON GREEN POWER MARKET DEVELOPMENT

Dan Reicher, Assistant Secretary of the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy, provided an overview of DOE's strategies for developing and commercializing renewable energy and natural gas technologies. He noted that the key drivers for federal involvement in clean energy technology development are energy security, environmental quality, and economic competitiveness. In reviewing the status of the various technologies, Mr. Reicher noted that the costs of renewables, most notably wind and photovoltaics (PV), have declined dramatically over the last two decades. And fuel cell technology is approaching widespread commercial application.

Mr. Reicher provided an overview of several federal proposals to support the development of renewable resources. One of the most important of these is the Clinton Administration's electricity restructuring bill. The Comprehensive Electricity Competition Plan calls for retail competition by 2003 and includes a renewables portfolio standard (RPS), which would require suppliers to provide 7.5% of their generation from renewable sources by 2010. The bill also amends the Public Utility Regulatory Policies Act (PURPA) to allow customer aggregation, includes an information disclosure provision, requires net metering, addresses interconnection standards, and would create a \$3 billion public-benefits fund.

DOE views green power as an important market for renewable energy technologies; however, it also recognizes that robust competitive markets are essential for green power marketing to be successful. Mr. Reicher noted that public policies, such as disclosure, incentives, and an RPS, can complement and support the development of green power markets. He also pointed to efforts to promote green power purchasing among federal agencies.

5

PANEL SESSION—FACILITATING THE GREEN POWER MARKET

This panel discussed several factors that, in addition to market structure, are important facilitators of green power market development. Among these factors are consumer education, environmental policies, information disclosure, and product marketing and advertising.

Maureen Mulligan of the Pennsylvania Public Utility Commission (PUC) provided an overview of the commission's electricity restructuring public education program, which is designed to inform customers about the opportunity to choose an electricity supplier. The PUC views itself as an "objective content provider" to protect consumers from conflicting messages. For the first year, the education campaign focused on providing customers with clear, unbiased information about how to enroll in the ElectriChoice program and "how to shop" for an electricity provider. The effort included television advertisements, radio and print ads, workshops, and grassroots outreach.

The most recent survey, conducted in March 1999, indicated that 91% of the respondents were aware that they could choose an electricity supplier. The remaining 9% were unaware of the program. Of those surveyed in March, 38% knew the details of how to participate in the ElectriChoice program. The main reason that customers chose to participate in the ElectriChoice program was lower electric rates (22%), choice (6%), better service (2%), more competition (1%), and other/environment/innovations (8%). Customers place the greatest trust in the PUC and the local electric company for providing accurate, credible information.

In the second year of the public education program, the PUC plans to spend about \$10 million to continue its efforts to teach customers how to shop as well as why they should shop. The PUC has found that television is highly effective at raising awareness of choice among consumers but consumer education about ElectriChoice is more likely at the grassroots level.

Opportunities for disseminating consumer education materials include: direct mail, community-based organizations, advisory councils, political and church leaders, hotlines, special-interest groups, schools, press (radio, newspaper, cable, special programming), town meetings, workshops, fairs, and trade shows. Use of the Internet is also growing as an information delivery mechanism.

Jean Hopkins of **U.S. Generating Company** addressed the interplay of markets and regulatory policies in achieving success with green power markets. She stated that a vibrant green power market can improve environmental quality but that the success of the market depends on consumer education, accurate information, and appropriate market rules and guidelines. She also stated her view that regulatory programs should "backstop" the market. As examples,

Panel Session—Facilitating the Green Power Market

Ms. Hopkins noted that disclosure rules can provide consumers with information on the environmental attributes of electricity supplies; a renewables portfolio standard can require retail suppliers to maintain minimum amounts of renewables in their power portfolios; and generation performance standards can require retail suppliers to meet minimum environmental performance standards for environmental pollutants. In all cases, the ability to accurately track and verify the environmental attributes of the generation is critically important.

Ms. Hopkins identified a number of mechanisms for verifying environmental attributes. Her company's preference is for separating the environmental attributes from the commodity energy component and creating "tradable environmental certificates." Ms. Hopkins noted that a number of environmental disclosure programs are already under way, specifically in Massachusetts, New Jersey, and New York. Finally, she said that it is important to give the market a chance to work and build on the lessons learned from the verification programs that are already in place.

Mark Stewart, representing the National Association of Attorneys General, provided an overview of the organization's draft environmental marketing guidelines for electricity, known as the "Green Guides." The NAAG guidelines are intended for use by industry and law enforcement agencies to clarify how environmental marketing claims can be made in a nondeceptive manner. The various areas covered include deception, substantiation of claims, qualifications and disclosures, linking attributes and benefits to products, overstatement of benefits, comparative claims, geographic limitations, general versus specific claims, environmental certifications, and quantitative claims related to emissions. To illustrate his points, Mr. Stewart provided several examples of advertisements that could be considered deceptive.

Mr. Stewart noted several legitimate concerns about the NAAG guidelines, including whether the group is "setting the bar" too high for green power marketers and whether the guidelines will place a disproportionate burden on new market entrants. After conducting a public hearing, NAAG hopes to issue final draft guidelines during the summer of 1999.

(*Editor's note*: NAAG approved its *Environmental Marketing Guidelines for Electricity* in December 1999. A PDF file of them is posted at http://www.eren.doe.gov/greenpower/naag_0100.pdf)

6

PANEL DISCUSSION—CUSTOMER AGGREGATION STRATEGIES

Aggregation of customer loads can be an important vehicle to increase green power sales. This panel session explored the experience of several different types of aggregators, including established energy cooperatives, municipalities, communities of faith, and businesses.

Dan Griffiths of the Energy Cooperative Association of Pennsylvania (ECAP) addressed customer aggregation in the Pennsylvania market. ECAP is a 20-year-old, Philadelphia-based fuel-oil cooperative that is now offering electricity, including a green power option, to its 7,500, primarily low-income, residential members. Mr. Griffiths noted that it is possible to compete and make money in Philadelphia because of the higher shopping credit but not in other areas of the state, such as Pittsburgh.

Although green power is more expensive than default power, ECAP is able to offer green power to its members at a slight discount to the default price because of the high shopping credit in PECO's territory, the savings resulting from the aggregation of member loads, and the fact that, as a nonprofit, ECAP does not mark up the price. ECAP also received a state grant for its program.

ECAP offers green power products with 50% and 100% renewables content utilizing small hydro and biomass resources. The power is supplied by Conectiv and is certified by Green-e. To date, 6.7% of ECAP's members are taking green power even though the cooperative has done little marketing of the product. Mr. Griffiths believes that ECAP could more than double its green power numbers with increased marketing efforts.

Susan Munves of the **City of Santa Monica** discussed the city's commitment to be the first "Green-Powered City," which stemmed from a formally adopted policy to make Santa Monica a more sustainable city. The city initially undertook a variety of energy efficiency projects, spending \$1.6 million on equipment upgrades, which resulted in savings of about \$250,000 each year. After California's electricity market was restructured, the city began to consider other types of energy projects, such as consumer aggregation, but found that few savings were available because of the utility stranded-assets charge. Santa Monica eventually decided to purchase green power for its municipal facilities and issued a request for proposals from green power providers. The city received 14 proposals and signed a one-year contract with Commonwealth Energy to purchase 5 MW of geothermal power at a 5% premium, which will increase municipal electricity costs by about \$140,000 each year.

For Santa Monica, the most important factors in selecting a green power provider were price flexibility, knowledge of where the power comes from, in-state generation, inclusion of the state customer credit in the rate offered, and a supplier commitment to new renewables generation.

Steve MacAusland of Episcopal Power and Light, a sub-group of the Episcopal Environmental Network, spoke of efforts to get communities of faith more involved in addressing environmental concerns. They picked climate change as a focus and are currently concentrating their efforts on California and New England because of electricity restructuring and the ability to purchase green power. In 1998, the California Episcopal Diocese adopted a resolution at its annual convention instructing the state's 87 churches to buy renewable power as a way to cut greenhouse gas emissions. As of early May, 12 California churches had opted to purchase green power, which is being supplied by Green Mountain Energy.

According to Mr. MacAusland, the purchases have generated significant media attention, including a Christmas Day (1998) article in the Los Angeles Times and stories on National Public Radio. For the future, the Episcopal group is considering the promotion of energy efficiency projects, both for environmental and job-creation purposes. They are also talking with other interfaith groups about joining their efforts.

Paul Aldretti of Business for Social Responsibility (BSR), a nonprofit organization with 1,500 member companies, talked about how to bridge the gap between green power marketers and potential business customers. Noting that BSR emphasizes integrated plans for businesses to address environmental impacts, he said that marketers need to articulate how green power purchases will improve the overall environmental performance of the company. He emphasized the need to both "integrate" and "innovate" to make deals happen. One suggestion is for marketers to bundle energy efficiency with green power as a way for businesses to justify the higher costs of green power purchases. Another possible strategy is to encourage employees to purchase green power for their own needs by including it in the employees' benefits package.

According to Mr. Aldretti, businesses can benefit from purchasing green power through the enhancement of brand equity and corporate image, improving stockholder relations, and potentially, by receiving credit for early action in reducing greenhouse gas emissions. Despite the small number of companies that have opted to purchase green power to date, the amount of electricity can be significant.

Barry Ingber of the Boston Oil Consumers Alliance (BOCA) spoke about aggregating customers in the restructured Massachusetts electricity market. BOCA was organized in 1981 to provide heating oil discounts to low- and moderate-income consumers. When the Massachusetts law was passed, BOCA saw a need to assist its members with electricity purchasing because of what it views as anti-consumer elements of market deregulation. Aggregation creates some market power for customers who otherwise would not have it. BOCA also wanted to promote green energy to mitigate the negative environmental impacts of electric industry restructuring.

BOCA had three basic principles in pursuing a green product: (1) they had to be able to provide real price savings to their members, (2) the product had to be truly "green," and (3) the group would continue to advocate for public policies to support energy efficiency and renewables. Because there is not a single supplier serving residential customers in Massachusetts, BOCA decided to partner with *All*Energy and market its ReGen "upgrade" service. Consumers who

purchase the ReGen product make a payment that is in addition to, rather than a replacement for, their regular utility bill. BOCA was able to secure the ReGen product for its members at a discounted price.

After five months, 135 out of 6,000 BOCA members had signed up for the ReGen service. BOCA is finding that its members are skeptical of the product and generally confused about electricity generation and delivery. Mr. Ingber emphasized the importance of educating consumers about electricity restructuring and generation impacts.

7 PANEL DISCUSSION—THE INTERPLAY OF RENEWABLES POLICY AND GREEN POWER MARKETS

This panel addressed how markets and policies can work together to support the development of green power markets. Policies such as a renewable portfolio standard, system benefits charge (SBC), tax credits, and information disclosure were discussed. There was general agreement among the speakers that some minimum level of policy support will still be required for renewables as the green power market evolves, but that these policies should be crafted to complement the development of the green power market.

Noting that the benefits of increased renewable energy use are largely public benefits, Alan Nogee of the Union of Concerned Scientists (UCS) argued that there are a number of real barriers to the successful development of green power markets, especially in the early years; therefore, there is a continuing need for public policy to support renewables. These barriers include retail market rules that are unfavorable toward retail competitors, and various market failures, such as continuing subsidies for fossil and nuclear generation, uncosted environmental externalities, and market inertia, which will keep many consumers from switching to a new supplier. Mr. Nogee identified a number of fair and market-oriented policies that can be used to support renewables, including an RPS, renewable energy funds, and uniform disclosure of fuel mix and emissions.

A key issue is how to design these policies so that they are complimentary to green power marketing efforts. Mr. Nogee argued that an RPS can help green marketing by familiarizing customers with renewables, lowering the cost of renewables technologies faster than would otherwise happen, and building market infrastructure. However, he cautioned that green power marketing should be incremental to the minimum renewables requirements contained in an RPS because allowing green marketing to meet an RPS would double-count renewables generation and may mislead customers who believe that their green power purchases are improving the environment. It is also inconsistent with the public benefits rationale for minimum renewables standards. Finally, he noted that polls have shown that the public prefers to "share the cost" of renewables development and environmental improvement.

Randy Swisher of the **American Wind Energy Association** spoke of tax equity and the green power market, providing an overview of the federal production tax credit (PTC) for wind energy and how its scheduled expiration on June 30, 1999, would negatively impact the development of green power markets. The PTC, adopted as part of The Energy Policy Act of 1992, provides a 1.5 cents per kilowatt-hour (¢/kWh) credit for wind energy production. The credit has been important for promoting the development of wind energy resources, resulting in about 600 MW of new wind-energy capacity development.

Mr. Swisher illustrated the impact of the credit on the cost of wind power, showing that a representative wind project amortized over 17 years would have a levelized cost of 3.4ϕ /kWh with the credit and 4.8ϕ /kWh without the credit. However, the cost impact is more dramatic with shorter-term contracts, which are more representative of today's increasingly competitive generation market. With a five-year project amortization, the same wind project will generate electricity for about 4.9ϕ /kWh with the credit compared to 8.5ϕ /kWh without the credit.

Mr. Swisher noted that because of higher up-front capital costs, renewables projects are already disadvantaged in shorter-term amortization markets, and the loss of the PTC would exacerbate this problem. As a result, the higher price premiums that would be required from prospective customers would negatively impact green power market development.

(*Editor's note*: In December 1999, President Clinton signed a Congressional bill extending the 1.5¢/kWh PTC for electricity generated from wind energy, closed-loop biomass, and poultry waste retroactively through December 31, 2001.)

Tim Tutt of the **California Energy Commission** (CEC) provided an overview of the renewables incentives contained in California's electricity restructuring law (AB 1890). Although non-hydro renewables already provide about 11% of California's electricity supply, there has been little new renewables development in recent years. AB 1890 established an SBC of about 0.3ϕ /kWh to support renewables, energy efficiency, low-income assistance, and public interest research and development, with about one-fourth of the funding going toward renewables.

Mr. Tutt noted that an RPS was considered but not adopted because the original proposal did not include cost caps and there were concerns that an RPS would be too costly to implement. With an SBC, the ultimate amount of renewables to be developed may be unknown, but the fund provides flexibility in deciding how to support renewables in varying market conditions. The California fund supports existing project operation, new project development, emerging technologies, consumer education, and customer credits for renewable energy purchases.

According to Mr. Tutt, the California renewables program is working well and proving to be a market-oriented solution. The CEC will now turn its attention to the consumer education campaign to help build consumer awareness of renewable power options. Another key issue is whether the funding for the public benefits programs should extend beyond the competition transition period.

Rick Counihan of Green Mountain Energy, representing the Renewable Energy Alliance, provided a marketer's perspective on the interplay between policies and renewable energy markets. He noted that the most effectual policy for renewables was PURPA, which provided a stable market for renewables in the 1980s through guaranteed utility power purchase contracts. However, Mr. Counihan believes that a stable future market for renewable resources is most likely to result from the interaction of buyers and sellers in a competitive market where the values inherent in renewables can be recognized.

Although the REA acknowledges the importance of public policies to support renewables, it does not officially endorse any particular type of policy. The organization would like to see renewables policies formulated to support the purchase of green power in competitive markets.

For example, the REA supports extension of the federal production tax credit because it helps reduce the cost of renewable supply. Green power marketers have also taken advantage of California's renewable purchase incentives, which have helped overcome the lack of price competition in the market. And California's emerging renewables account has helped support rooftop PV systems.

Mr. Counihan stated that an RPS should serve as a floor for renewables. However, green power marketers are concerned that it could effectively become a ceiling for renewables, with the result that consumers would be less willing to support competitive green power products if a certain fraction of renewable energy is already built into the generation portfolio.

8

PANEL DISCUSSION—WHAT'S NEW IN GREEN PRICING?

The final panel of the conference addressed new developments in utility green-pricing programs. After panel chairman Terry Peterson of EPRI presented a snapshot view of national green-pricing trends, three evolving programs were described along with a proposal to develop a national certification program for utility programs. Common program challenges identified by the utility speakers were customer education, the need to collaborate with external stakeholders in program development, and the importance of internal management support and a well-trained utility sales force.

Larry Liss of the Nebraska Public Power District (NPPD) described the utility's contribution-based, green-pricing program called *Prairie Power*, that was launched earlier in the year. NPPD, a public power utility serving most of Nebraska, is offering customers an option to make tax-free donations to support the development of renewable energy resources. The utility decided to offer a contribution program rather than a green rate tied to electric service to simplify the program. And because NPPD members are public utilities, the customer contribution is tax deductible. NPPD plans to construct wind turbines or install small-scale PV systems in its service territory, depending on the number of customers that enroll in the program. Some of the challenges that NPPD has encountered to date are poor response to initial newspaper advertisements, a general lack of understanding about green power among customers, and a shortage of well-trained staff to respond to customer inquiries. NPPD has also found it more difficult than expected to get the attention of the local media.

Susan Ross of the **Tennessee Valley Authority** (TVA) described the utility's green-pricing program, which it plans to test-market in 2000 and fully implement starting in 2002. TVA will test the program with nine distributors, serving about 700,000 customers. In preparation for the program launch, TVA conducted a number of market research studies and has identified potential sources of renewable supply. In January 1998, TVA issued an RFP to identify resources that could supply the program and received proposals for about 500 MW of biomass, wind, and solar generation.

Some of the key findings from TVA's market research included the following: customers favor wind and solar resources; they want to see new resources developed; third-party certification is important; energy efficiency should be encouraged; education about green power is necessary; and customers want to have options. TVA plans to include locally developed solar, wind, and landfill-gas resources in its green power mix. Some lessons learned from program development are to conduct the market research before issuing an RFP for supply, involve environmental groups early in the process, and obtain executive-level support for the program.

Laura Williams of Madison Gas and Electric Company (MG&E) discussed the company's new green-pricing program. MG&E is a small investor-owned utility serving about 100,000 residential customers and 10,000 businesses in and around Madison, Wisconsin. The utility is building an 11.22-MW wind project and offering the power to its customers in blocks of 80 to 120 kWh for \$5.00 per month. Businesses also can participate in the program by committing to a minimum purchase of the larger of \$15 per month or 5% of their electricity use. The effective wind power premium will be 4.17¢/kWh to 6.25¢/kWh, depending on whether the federal production tax credit can be applied.

(*Editor's note*: MG&E later lowered the effective wind energy premium to 3.33¢/kWh, or \$5.00 per 150-kWh block per month, based on the final construction costs and qualifying for the federal production tax credit.)

MG&E began marketing the wind program to its residential customers with bill inserts and direct mailings in February and to its business customers in April. To date, the company has signed up 2.6% of its customers with an average commitment of \$8 per month (an average 17% bill increase) and has identified 20 interested businesses. The company projects that it will sign up about 5% of its customers by the time the wind turbines come on line. Ms. Williams stressed the importance of integrating the wind program message into everything the utility does. Some other lessons learned in the early stages of program implementation are the importance of uppermanagement support, of a well-trained sales staff, of setting well-defined goals, of educating customers, and of collaborating with local organizations in program development.

Karl Rábago, Chair of the **Green Power Board**, provided an overview of the Green-e certification program and efforts to develop a new certification program for utility green-pricing programs. Green-e was designed to make green power selection easy for customers by creating an immediately recognizable and easily understood symbol of environmentally superior power. However, Green-e certification is available only for products being sold in competitive markets—20 different products in California and 4 in Pennsylvania have received Green-e certification. The Green Power Board is now considering options for expanding the scope of the certification process to include utility green power products offered in regulated markets.

A green-pricing certification program would provide a national standard for best practices in designing utility programs, support stakeholder involvement in program development, and promote consumer confidence in utility product offerings. Some of the special challenges involved in applying the Green-e program to regulated markets are issues of market power and regional differences in green-pricing strategies. A green-pricing certification program would likely include strong disclosure provisions, require new renewable resources, involve local environmental groups, and in some cases, involve participation by regulators. The Green Power Board has circulated draft guidelines for a green-pricing certification program and Mr. Rábago encouraged attendees to provide comments on the draft proposal.

(*Editor's note*: In November 1999, the Center for Resource Solutions launched an independent accreditation program for utility green-pricing programs, and expect to have at least one application for accreditation before the Green Pricing Accreditation Board by Earth Day 2000.)

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WORKSHOP PRESENTATIONS

Opening Session

- Welcoming Address: "Pennsylvania's Competitive Electricity Market"
 Nora Brownell, Commissioner, Pennsylvania Public Utility Commission
- "Comparing Today's Competitive Electric Markets: Market Rules Do Matter" Julie Blunden, Vice President of Strategic Planning Green Mountain Energy
- "Clean Energy and Electricity Restructuring: A Federal Policy Overlay"
 Steve Kline, Vice President of Federal Governmental and Regulatory Relations, PG&E Corporation

Panel Discussion — "Green Power: What are Consumers Getting?"

- Sheryl Carter, Natural Resources Defense Council
- Michael Tennis, AllEnergy Marketing Company
- Chris Schoenherr, Wisconsin Electric

Luncheon Presentation — "A Federal Perspective on Green Power Market Development"

• Dan Reicher, Assistant Secretary, U.S. Department of Energy

"Facilitating the Green Power Market"

- "Information Disclosure and Green Power" Jean Hopkins, U.S. Generating Company
- "NAAG's Environmental Marketing Guidelines" Mark Stewart, Pennsylvania Office of Attorney General

Panel Discussion — "Customer Aggregation Strategies"

- Paul Aldretti, Business for Social Responsibility
- Barry Ingber, Boston Oil Consumers Association

Panel Discussion — "The Interplay of Renewables Policy and Green Power Markets"

• Tim Tutt, California Energy Commission

"What's New in Green Pricing?"

- "Green Pricing Program Growth" Terry Peterson, EPRI
- "Prairie Power" Larry Liss, Nebraska Public Power District
- "MGE's Wind Energy Program" Laura Williams, Madison Gas and Electric
- "Green-e Certification for Utility Programs"
 Karl Rábago, CH2M Hill and Green Power Board